

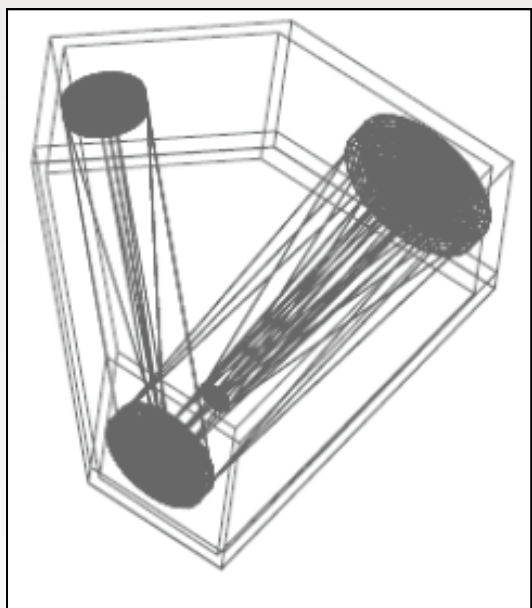
TECHNOLOGY READINESS LEVEL: 4

PROOF OF CONCEPT DEMONSTRATED, BUILT AND TESTED

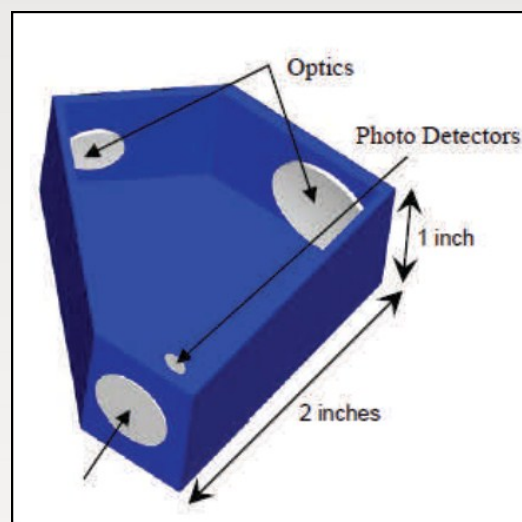
US PATENT # 7,697,134

TECHNOLOGY SUMMARY

Correlation spectrometers measure trace amounts of a chemical in the presence of a lot of other chemicals by comparing the light transmission of a sample to a known reference.



Working for the U.S. Consumer Product Safety Commission, Sandia optical engineers created a new instrument for measuring trace amounts of chemicals like methane or carbon monoxide. The spectrometer encodes dozens of reference signals onto a compact disk, alleviating the need to port around reference gas samples or run samples to a lab for gas chromatography. The disk-encoded correlation spectrometer enables rapid, high confidence point-of-service measurements of trace gases.



POTENTIAL APPLICATIONS

- Consumer furnace safety: carbon monoxide testing
- Gas pipeline safety methane sensing
- Industrial processing monitoring
- Safety: hazardous gas monitoring
- Environment: air quality/pollution, greenhouse gases

TECHNOLOGICAL BENEFITS

- Optimized for infrared chemical signature detection
- Eigen-spectra encoded on a rotating mask enables lock-in detection of gas concentration
- Ideal for detection where other gases interfere and spectral lines are not fully resolved

TECHNOLOGY INQUIRY?

For more information or licensing opportunities contact us at

ip@sandia.gov

Refer to SD # 10165

or visit

<https://ip.sandia.gov>